11. (new) Use of the vaccine of claim 8 for eliciting long-lasting protective antiviral immune responses against influenza viruses.

12. (new) A plasmid vector construct pCI-HA10 comprising a gene encoding for hemagglutinin protein and capable of expressing said hemagglutinin protein in a host.

13. (new) A method for constructing a plasmid pCI-HA10 comprising the following steps:

(1) amplifying hemagglutinin gene from viral and mRNA with PCR;

(2) inserting and ligating the hemagglutinin gene into a pCI vector;

(3) transforming the resulting vector into competent E.coli DH5α cells;

(4) transcribing and translating of pCI-HA10; and

(5) preparing and purifying pCI-HA10 by bulk preparation method.

14. (new) A liposome formulation for encapsulating the plasmid pCI-HA10 of claim 12 comprising of 7% 1,2 dioleoyl-3-dimethylammonium chloride (DODAC), 78% 1,2-dioleoyl-sn-glycrerol-3-phospho-ethanolamine (DOPE) and 15% polyethylene glycol C8 ceramide ($PEG_{2000}C_8CER$).

15. (new) A method for encapsulating the plasmid pCI-HA10 of claim 12 into liposomes comprising the following steps:

(1) preparing 7% DODAC, 78% DOPE, and 15% $PEG_{2000}C_8CER$ at 10mg/ml concentrations to form a lipid film at 50 °C for 2h under vacuum;

(2) incubating the lipid film at 50 °C for 2h under vacuum;

(3) reconstituting the lipid film with distilled water and 1M β-octylglucanopyranoside detergent at 20% of the total preparation volume;

(4) adding the plasmid DNA to the lipid film at a concentration of 400 μg DNA/ml of 10 mg/ml;

(5) transferring the reconstituted preparation into dialysis tubing and dialyzing in 1X HEPES buffer solution (150 mM NaCI, 20 mM Hepes, pH 7.4) at 23 °C for 15 h; and

(6) removing the free, non-encapsulate DNA from encapsulated DNA on a DEAE Sepharose CL-6B anion exchange column.

16. (new) A liposome-encapsulated pCI-HA10 constructed in accordance with the method of claim 15.

17. (new) A method of delivering the liposome-encapsulated pCI-HA10 of claim 16 to a respiratory tract using intranasal administration, and/or aerosol inhalation to eliciting protective antiviral immune responses to influenza viruses.

18. (new) A method for preventing and/or treating influenza virus infection, comprising administering to a patient in need thereof a pharmaceutically effective amount of the vaccine of claim 8.

19. (new) A method for eliciting long-lasting protective antiviral immune responses against influenza viruses, comprising administering to a patient in need thereof a pharmaceutically effective amount of the vaccine of claim 8.

REMARKS/ARGUMENTS

This is a full and timely response to the non-final office action of December 16, 2002. Reexamination and reconsideration are courteously requested.